



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

SCIENCE

EDITORIAL COMMITTEE: S. NEWCOMB, Mathematics; R. S. WOODWARD, Mechanics; E. C. PICKERING, Astronomy; T. C. MENDENHALL, Physics; R. H. THURSTON, Engineering; IRA REMSEN, Chemistry; J. LE CONTE, Geology; W. M. DAVIS, Physiography; O. C. MARSH, Paleontology; W. K. BROOKS, Invertebrate Zoölogy; C. HART MERRIAM, Vertebrate Zoölogy; S. H. SCUDDER, Entomology; N. L. BRITTON, Botany; HENRY F. OSBORN, General Biology; H. P. BOWDITCH, Physiology; J. S. BILLINGS, Hygiene; J. McKEEN CATTELL, Psychology; DANIEL G. BRINTON, J. W. POWELL, Anthropology.

FRIDAY, SEPTEMBER 20, 1895.

CONTENTS:

<i>Springfield Meeting of the American Association for the Advancement of Science:—</i>	349
Section B. Physics: WILLIAM HALLOCK. Section C. Chemistry: W. A. NOYES, A. H. GILL, FRANCIS C. PHILLIPS. Section D. Mechanical Science and Engineering.	
<i>Development of Vegetable Physiology: J. C. ARTHUR</i>	360
<i>Current Notes on Physiography (XVI):—</i>	373
National Geographic Monographs; The Composite Origin of Topographic Forms; Tidal Streams about the British Isles; Meteorological Charts of the Red Sea: W. M. DAVIS.	
<i>Preliminary Note on a Contagious Insect Disease: S. A. FORBES</i>	375
<i>Scientific Notes and News</i>	376
<i>University and Educational News</i>	378
<i>Correspondence:—</i>	379
Are Consequences Ever a Test of Truth? JOSEPH LE CONTE. The Katydid's Orchestra: GEORGE M. GOULD.	
<i>Scientific Literature:—</i>	381
Foster's Physiology: W. T. POETER. Nehrling's North American Birds: C. H. M.	
<i>Scientific Journals</i>	383
The American Geologist; The Astrophysical Journal.	
<i>New Books</i>	384

MSS. intended for publication and books, etc., intended for review should be sent to the responsible editor, Prof. J. McKeen Cattell, Garrison on Hudson, N. Y. Subscriptions and advertisements should be sent to SCIENCE, 41 N. Queen St., Lancaster, Pa., or 41 East 49th St., New York.

SPRINGFIELD MEETING OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

SECTION B. PHYSICS.

THE address of the Vice-President, Prof. W. Le Conte Stevens, was upon 'Recent

Progress in Optics.' He introduced the subject by referring to the impossibility of summarizing all of the work, even of a meritorious order, that has been accomplished, and preferred to discuss certain investigations of special merit. First among these was the standardizing of the metre in terms of a wave-length of light, an investigation begun by Michelson and Morley eight years ago, and recently completed by Michelson at the observatory of the International Bureau of Weights and Measures near Paris. A brief description was given of the construction and use of the interferential comparer, and the difficulties encountered in securing a perfectly homogeneous spectrum tint. Spectral lines that had been supposed to be single, and hence due to approximately homogeneous light, were found to be multiple, presenting the phenomenon of optical beats, or maxima and minima of brightness in the interference fringes that pass across the field of view in the observing telescope. So delicate is the method that it is possible to detect a variation of wave-length corresponding to as little as one-thousandth of the interval between the two main components of what is commonly known as the sodium line. The red line of cadmium was found the most nearly simple of all those examined, and the length of the standard meter was determined to be 1,553,163.5 wave-lengths of cadmium light. This was the mean of two independent